

Report

Breaking the gridlock



ODI Global

Chinese capital in South Africa's energy transition

Yunnan Chen, Wei Shen, Lin Shi and Nishal Robb



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Acronyms/Glossary

| | |
|----------------|---|
| BEE | Black Economic Empowerment |
| BOC | Bank of China |
| BOOT | Build-Own-Operate-Transfer |
| BRI | Belt and Road Initiative |
| CCB | China Construction Bank |
| CDB | China Development Bank |
| DBSA | Development Bank of Southern Africa |
| DFI | Development Finance Institution |
| DMRE | Department for Mineral Resources and Energy |
| ECA | Export Credit Agency |
| EMDEs | Emerging Markets and Developing Economies |
| EPC | Engineering, Procurement and Construction |
| ESG | Environmental, Social and Governance |
| EV | Electric Vehicle |
| FDI | Foreign Direct Investment |
| ICBC | Industrial and Commercial Bank of China |
| IDC | Industrial Development Corporation (South Africa) |
| IPP | Independent Power Project |
| IRP | Integrated Resource Plan |
| ITP | Independent Transmission Project |
| JETP | Just Energy Transition Partnership |
| NDB | New Development Bank (BRICS Bank) |
| NTCSA | National Transmission Company of South Africa |
| OEM | Original Equipment Manufacturer |
| PDB | Public Development Bank |
| PPP | Public-Private Partnership |
| PPA | Power Purchase Agreement |
| PV | Photovoltaic (solar power) |
| REIPPPP | Renewable Energy Independent Power Producer Procurement Programme |
| RMB | Renminbi (Chinese currency) |

| | |
|-------------|-------------------------------|
| RFP | Request for Proposal |
| SAPP | Southern African Power Pool |
| SBG | Standard Bank Group |
| SOE | State-Owned Enterprise |
| TDP | Transmission Development Plan |

Executive summary

South Africa's power system stands at a pivotal juncture.

The country, which remains highly coal-dependent, has been a leader in pushing an ambitious decarbonisation and energy transition agenda. The country has huge wind and solar potential, concentrated in the Northern Cape and Northwest provinces, and renewables capacity has dramatically expanded via the Renewable Energy Independent Power Procurement Project (REIPPPP). However, chronic electricity shortages and limited grid capacity constrain both economic activity and the uptake of renewable energy.

Domestic commercial banks have taken the lead in driving renewable generation investment.

However, the lack of transmission infrastructure remains the most significant bottleneck to unlocking this potential and ensuring a stable energy grid infrastructure for future energy addition needs, particularly for renewable energy expansion. This is an area where both domestic and international financing will need to play a complementary role.

Recent reforms and liberalisation in the energy sector, including the unbundling of the state utility Eskom and the creation of the National Transmission Company (NTCSA),

have opened up new opportunities in the transmission sector via new PPP models of independent transmission projects (ITPs), and via embedded generation models for renewable energy.

However, the successful expansion of these projects will depend on investor confidence in the sector, in mitigating offtaker risk and in the availability of commercial financing and international guarantees – chiefly, the World Bank's Credit Guarantee Vehicle (CGV).

In recent years, China has stepped up its commitments in green finance and in supporting the roll-out of clean technologies in Africa and the Global South.

However, while Chinese banks and ECAs have been active in debt financing in other parts of sub-Saharan Africa, they have played a limited role in South Africa's energy transition, due to fundamental mismatches between the mandates and strategies of Chinese ECAs and firms, South Africa's regulatory requirements, as well as policy and commercial factors that deter investment.

In South Africa's energy sector, Chinese SOEs and investors (including Longyuan, Goldwind and PowerChina) play a major role in generation and transmission projects

as engineering procurement and construction contractors (EPC), and as original equipment manufacturers (OEM) and suppliers. There is an opportunity to deploy key Chinese technologies in transmission equipment, including transformers and inverters as well as high-voltage transmission (HVDC) systems. However, low risk appetite among Chinese firms for long-term investments leads to a 'wait-and-see'

approach, and financial and regulatory constraints deter investments in transmission and distribution infrastructure. The launch of the request for proposals (RFP) towards the end of 2025 will be a demonstration of investor interest and feasibility of the structure.

Co-financing and joint investment between South African and Chinese companies in the energy sector is rare, despite the broader trend of co-financing in China's overseas finance. Cases such as Longyuan-Mulilo co-financed wind farms, and the Samancor-CGN embedded solar generation project, demonstrate potential, but have not been replicated. This is due to falling tariffs, growing competition in the sector in subsequent bidding rounds for IPP projects and lack of risk appetite on the part of Chinese investors.

Chinese companies face barriers to investment that put them at disadvantage relative to European and Middle-eastern companies. These include financial risks, including restrictive rules around minimum internal rates of return under Chinese regulations; lack of instruments to manage currency and long-term exchange rate risks with long-term investment projects; and challenges in building local networks and partnerships. SA regulatory requirements around black economic empowerment (BEE) policies have been a key limitation for Chinese co-investment. Stakeholders also cite the lack of policy incentives for green finance, as well as the need to incorporate grid investment into green taxonomies. Finally, for transmission projects, institutional uncertainties,

including Eskom's credibility as an offtaker, the separation of Eskom and NTCSA, and transparency around procurement processes remains a risk for all investors.

There are clear **opportunities for mobilising Chinese capital and investment** to support South Africa's energy sector development:

Chinese banks and financial institutions provide liquidity support for South African commercial banks and green finance landscape. This includes the use of credit lines and on-lending to South African commercial and public development banks, participation in syndicated lending, and secondary market transactions in de-risking the debt portfolios of South African banks. This financial additionality role can expand the financing capacity of South Africa's public development banks such as IDC and DBSA, who play a key role in supporting SA firms and value chains as partners for international investment, but are limited by their balance sheets and capacity.

Chinese capital and technology can play a critical role in the transmission sector. Uptake of low-cost Chinese technologies including HVDC, could be critical in the rollout of transmission projects, and there is a clear rationale for negotiating strategic procurement agreements with Chinese OEMs for key technologies in grid and storage components, led by South African governmental agencies such as DTIC and NTCSA, that can also leverage South Africa's manufacturing capacity in industries and components

integral to transmission, such as cables, steel and other electronics. Chinese companies should also be encouraged to take a longer-term localisation strategy to support joint ventures and co-investments that can spur localisation of production and manufacturing to meet local content requirements, and build local networks and community engagement.

Chinese policy banks and ECAs should also consider adapting to South Africa's market needs, such as extending project finance tenors, exploring blended finance models or guarantee-backed extensions to enable support for high-risk strategic sectors such as transmission under PPP models, and in enhancing local currency financing mechanisms. Chinese official and commercial capital can also bolster South Africa's financial capacity through expanding liquidity and crucially, longer-tenor financing for its public development banks (PDBs), which can in turn serve as investment partners in infrastructure assets and facilitators of Black Economic Empowerment (BEE) objectives.

Finally, for all international and commercial investors, South Africa should ensure credibility and clarity in the development of transmission projects including clarifying land rights and ensuring that tariffs sufficiently cost for systems services and grid stabilisation. While the domestic financial sector will continue to play a dominant role in financing the energy transition, including for transmission, bringing other international partners into the market earlier will help ensure sufficient liquidity and capacity, and build investor confidence.

1 Introduction

South Africa stands out on the African continent in terms of its ambitions for a just energy transition.

It has launched multiple domestic initiatives to expand renewable energy generation, and implemented reforms to liberalise the electricity sector. As a major coal-dependent energy producer, South Africa's transition is not only critical for reducing carbon emissions and meeting national climate goals, but also for supporting broader employment, social and economic development and energy security objectives. In achieving these goals, it has partnered with diverse international actors to finance its transition, most notably through the Just Energy Transition Partnership (JETP), but also relying on other partners.

China has been a key player in South Africa's energy sector and energy transition. Across the continent, China has become a prominent supplier of clean technologies and infrastructure construction (Shen and Power, 2017; Shen, 2020; Kiryakova et al., 2025). Green finance and clean tech exports have become increasingly salient in China's overseas engagement and the Belt and Road Initiative (BRI) (Nedopil, 2022), and in recent years has seen a boom in clean tech manufacturing investments in parts of the global south (Xue and Larsen, 2025). South Africa is well-positioned to leverage the financial and technological resources Chinese markets can offer.

This report examines the landscape of South Africa's energy transition finance and electricity sector reforms. It highlights areas of Chinese participation in the energy and power sector, looking at generation (including embedded generation), transmission and distribution (T&D) and financial services. It also identifies the challenges and barriers to Chinese (and other international) investment in the market.

This report tackles three areas:

1. The evolving role of Chinese capital in South Africa's energy transition in generation, transmission and energy finance;
2. Opportunities for expansion and collaboration, such as co-financing and co-investment with Chinese stakeholders; and
3. The bottlenecks and challenges to unlocking this investment.

While South Africa is a clearly an important market for Chinese suppliers and contractors, multiple barriers deter longer-term investment and equity participation in energy sector projects. South Africa's energy sector holds huge potential for renewables expansion and energy diversification, however transmission and power grid capacity remain critical bottlenecks. As the country reforms its transmission sector in 2025, including a shift to a new PPP model for the power grid, this is an opportunity for expanded investment and financing

in the sector – and a necessity for South Africa’s future energy security and energy transition. Chinese players have a critical role to play, both in developing the infrastructure and in the provision of key technologies, if barriers to investment can be unlocked. Chinese financing can also play an indirect role in supporting the capacity of South Africa’s financial actors.

1.1 China’s role in global energy transition

China’s overseas finance and investment has transformed over the last decade. The decline in overseas lending from Chinese banks and financial institutions has been well-documented (Chen and Liu, 2023; Parks et al., 2023), but the nature of overseas finance and investment has also shifted, driven in part by growing domestic sector risks and saturation, as well as external factors including the growing debt burden among EMDE borrowers (Masamba et al., 2022; Lazard, 2025).

BRI lending has diversified both in terms of institutions, with greater participation from commercial banks and corporate sector, and instruments, including a greater emphasis on risk-sharing and co-financing with other international investors, including MDBs (Parks et al., 2023; Wu and Chen, 2024; Chen and Emery, 2025). This has manifested in Africa in the rise of risk-sharing models with the corporate sector through the

use of PPP structures, particularly in ports and logistics (van Wieringen and Zajontz, 2023).¹

Overseas finance has become greener. Since 2021, the ‘no new coal’ pledge has halted financing for new coal plants overseas, and ‘traffic light’ systems introduced under a ‘green BRI’ also indicate a more cautious approach to financing higher-risk projects in fossil fuel and energy intensive sectors (Chen and Shen, 2022; Nedopil, 2022). Under the recent Forum on China Africa Cooperation (FOCAC), China has pledged to develop 30 new ‘green’ projects in Africa over the next three years (Calabrese and Chen, 2024; Xinhua, 2024). At COP 29 in November 2024, Vice-President Ding Xuexiang announced that the country had contributed nearly \$25 billion in climate finance since 2016, signalling continued commitment to global climate cooperation (State Council, 2024).

Domestically, the growth of Chinese cleantech industries, most prominently solar photovoltaic (PV) cells and electric vehicle (EV) technology, has become central to sustaining economic growth. But it is also increasingly central to China’s global economic diplomacy, where support for green finance, and for the ‘going out’ of China’s cleantech industries, have become top-line mandates for state-owned financial institutions and commercial banks (Dong and Buckley, 2024; Freemantle and Stevens, 2024).

¹ The recent case of expressway and railway construction in Kenya is an example of this model: <https://chinaglobalsouth.com/2023/12/19/china-could-fund-kenyan-rail-through-public-private-partnership-kenyan-president/>

China also leads in the development and deployment of high-voltage and ultra-high voltage (UHV) transmission technologies and standards both domestically and increasingly overseas (Paulson Institute, 2015; Motoryn, 2024). However, while green finance has become a larger part of the mandate of state-owned financial institutions, there has yet to be a major pivot towards green financing from major commercial banks (Chen and Emery, 2025). Meanwhile in the mining sector, links between mining revenues and renewables investments under a ‘mineral-energy nexus’ have been explored as a means to enable sustainable energy investment in critical minerals to gain developmental co-benefits (Wang et al., 2024).

These trends point to several emergent roles for China in supporting energy transitions and energy sector development in Africa: 1) as a provider of technology and infrastructure; 2) as a provider of capital and financing for critical investments; and 3) in enabling commercial investments (and co-financing) as a longer-term project stakeholder in transition sectors. How this manifests on the ground will vary significantly by region and context, and by the presence (or absence) of enabling factors.

1.2 What does this mean for South Africa?

South Africa is an industrialised middle-income country balancing ambitious energy transition and carbon emission goals with strong economic development and social justice priorities – as shown

in its presidency of the G20 in 2025, and outlined in its 2050 net zero target and ambitious renewable energy expansion strategies. Expansion of renewable energy in the power sector is a climate and transition objective, but it also serves wider economic development and energy security goals.

Chronic electricity shortages, rising decarbonisation commitments and limited grid capacity all constrain both economic activity and the uptake of renewable energy. Electricity access remains unstable, with ‘load-shedding’ and power supply issues a regular occurrence since 2019. The country has huge wind and solar potential, concentrated in the Northern Cape and Northwest provinces, but the lack of transmission infrastructure is a significant bottleneck to unlocking this potential.

South Africa is a leader in Africa in its deployment of renewable energy, leveraging significant private sector investment in the generation and transmission sector, most prominently in the Renewable Energy Independent Power Producer Procurement Program (the REIPPPP). It has also taken a strategic approach to leveraging renewables and critical mineral resources as part of wider industrial development plans (Eberhard, Kolker and Leigland, 2014; SAREM, 2023). Even so, coal remains a hugely important part of the country’s energy composition and is deeply embedded in the political economy; recent load-shedding and power constraints have delayed plans for decommissioning.

Chinese suppliers and contractors have been active in South Africa's renewable energy sector (Baker and Shen, 2017; Kiryakova et al., 2025), but there has been little sign of long-term investment. With the advent of new reforms in the electricity sector and the restructuring of power utility Eskom, and as G7 financing becomes more volatile, this begs the question whether South Africa can leverage greater investment from alternative international partners, including China.

1.3 About this report

This report analyses the role of Chinese capital and investment in South Africa's energy sector, drawing directly from key Chinese stakeholder perspectives to identify the perceived challenges and potential opportunities for co-financing and investment for energy transition goals.

The report draws on primary and secondary research, including semi-structured field interviews with 25 informants between January and October 2025, in Johannesburg and Cape Town and via virtual calls. These included representatives of Chinese entities involved in South Africa's power sector, representatives from South Africa's commercial sector and power sector bodies, representatives of international and national financial institutions, and other civil society actors and experts familiar with South Africa's energy sector and Chinese investments in sub-Saharan Africa.

The interviews explored the role and involvement of Chinese investors in the energy sector, the evolution of Chinese investments and investment appetite over time, and opportunities for, and barriers to, co-investment and co-financing. Due to the sensitivity of some of the topics, interviews are anonymised, though we include a list of informants who agreed to be identified in the Appendix to this report.

The paper is structured as follows. Section 2 outlines the landscape of South Africa's energy transition, key policy and institutional developments and the challenges of external financing. Section 3 looks at the role of Chinese actors in South Africa's energy transition, focusing on power generation in renewables and highlighting key case studies of co-financing and investment in the power and transmission sectors and in the financial sector. Section 4 highlights key bottlenecks and challenges facing Chinese investment in the renewables and power sector. Section 5 concludes with policy implications for South African and Chinese stakeholders.

2 South Africa's energy transition landscape

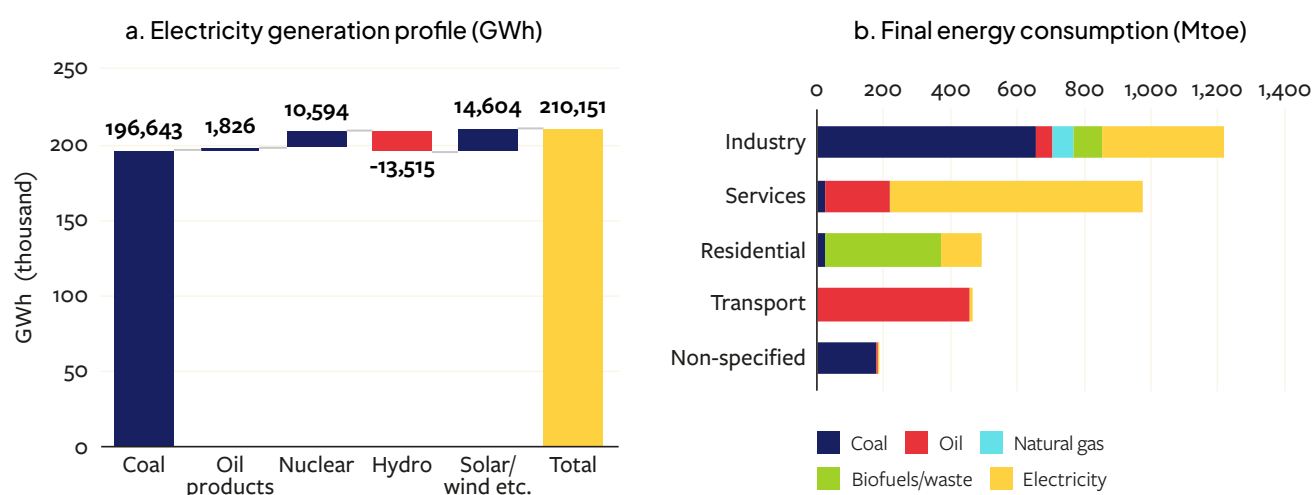
South Africa has ambitious energy transition plans, but faces key

constraints: in the challenge of transitioning from a coal-dependent energy context, and in the operational challenges of its state-owned utility. The consequences are wide-reaching, with delays in connecting new generation capacity, frequent load-shedding and economic losses. The growth of renewables and the rise of private energy generation has helped alleviate energy constraints, but significant financing needs remain in supporting a just energy transition. Transmission and distribution (T&D) remains a key bottleneck to energy security and stability.

2.1 South Africa's energy context

South Africa is an exceptionally coal-reliant economy due to its natural endowments, the central place of mining in its history and its failure to break out of the path dependencies that continue to shape its trajectory (Christie, 1984; Bowman, 2020a). Coal-fired power stations made up around 84% of nominal capacity in 2021 (DMRE, 2024), and occupied 93.5% of energy generation in 2022, the most recent year for which energy balance statistics are available. Renewables (excluding hydro) account for 6%.

Figure 1 South Africa energy balances, 2022



Source: Author's elaboration based on data from Department of Mineral Resources and Energy: Energy Balances 2022.^{2 3}

- 2 Electricity generation from hydro sources is negative due to the source calculating this figure on a net basis, subtracting the energy used in pumped storage facilities from the total electricity generated by hydro sources as a whole.
- 3 Final energy consumption is equal to the sum of the consumption in the end-use sectors. Energy used for transformation processes and for own use of the energy producing industries is excluded. Mtoe refers to million tonnes of oil equivalent.

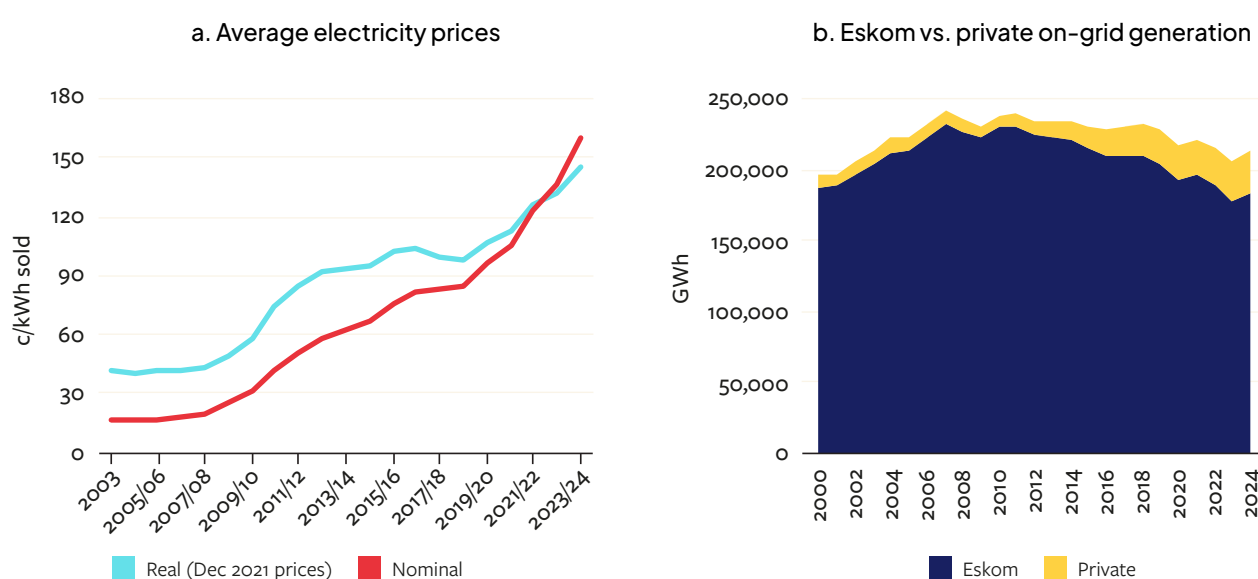
As well as accounting for a dominant share of electricity production, coal accounts for a majority of the energy consumed in industrial processes (Figure 1b). The emissions-intensive combination of coal-fired electricity and coal-reliant industry, once a competitive advantage, now places the country's export competitiveness and investment case at risk in key markets; the EU's Carbon Border Adjustment Mechanism is a case in point (Montmasson-Clair, 2020; Bell, Goga and Robb, 2022).

The country's main utility, Eskom, operates a grid largely built in the 1970s and 1980s characterised by frequent failures and declining energy availability (from 87.50% in 2007 to 54.56% in 2024) (Eskom, 2007; 2024a). Operational and financial challenges have resulted in more immediate damage, with rapidly rising real electricity prices (Figure 3a), declining

demand from key industrial customers, ballooning debt linked to delayed and over-budget mega-projects, and poor maintenance of the coal fleet over the 2010s (Makgetla, 2017; Bowman, 2020b). Unplanned power outages peaked in 2023 at more than 7,000 hours and 16,000 GWh (SARB, 2022; Creamer, 2023; Janse van Rensburg and Morema, 2023).

These dynamics have led both to growing private participation in electricity generation for the grid (Figure 2b), most notably through the REIPPPP, and private investment in off-grid solutions at various scales, from residential to small-scale embedded generation and utility-scale. With the removal of licensing requirements for private energy generation in December 2022, embedded generation structures have taken off, as seen in the growth in private off-grid renewable capacity (Figure 3a).

Figure 2 Electricity price and output trends

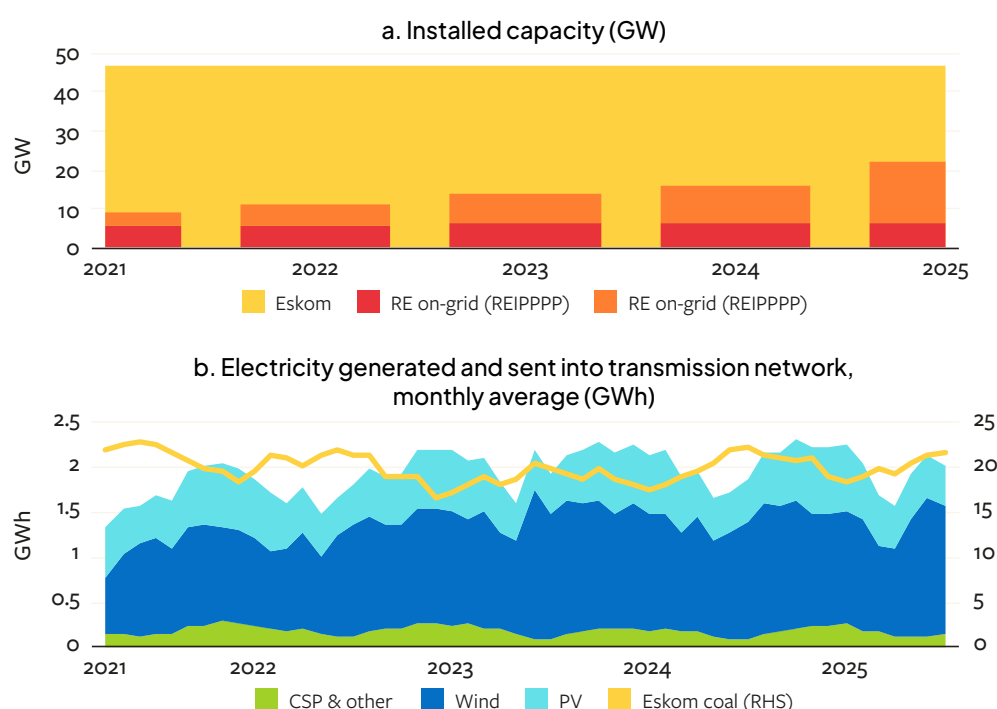


Source: Author's elaboration based on data from: a. Eskom; b. Statistics South Africa.

According to one senior policy advisor, ‘Grid electricity used per R1m of GDP has dropped almost 25% in the past 15 years, with a 6% decline from 2019. Each South African now uses on average 27% less grid electricity than in 2010 and 12% less than in 2019’ (Makgetla,

2025). Electricity generated on-grid (as opposed to installed capacity) remains overwhelmingly coal-fired (Figure 3b). As such, the future development of the transmission grid plays a crucial role in shaping South Africa’s energy transition.

Figure 3 Eskom vs. renewable energy, 2021–2025⁴



Source: Author’s elaboration based on data from Eskom and (Olver, 2024).

2.2 Energy planning, unbundling and the transmission grid

The key national energy system planning processes are the Integrated Resource Plan (IRP), produced by the Department of Mineral Resources and Energy (DMRE), and the Transmission Development Plan (TDP), produced by Eskom.

The electricity infrastructure development plan under the IRP aims to achieve a balance between least-cost electricity supply, national demand projections and broader socioeconomic issues, including affordability of supply and environmental concerns. The TDP evaluates network requirements and proposes plans to meet projected demand and integrate new generation over a 10-year period. The

⁴ Figures for 2021 start in April; figures for 2025 end in July. Also note that the 2024–2025 increase in installed capacity for off-grid RE reflects planned rather than installed capacity as reflected in Olver (2024).

TDP 2023 to 2032 identifies infrastructure needs to maintain existing infrastructure and accommodate future demand growth, integrate new generation from Eskom-owned facilities, provincially or municipally owned facilities and IPPs, and transmit power from generators to load centres. It also describes various projects related to refurbishing aging infrastructure, acquiring sites and servitudes, and procuring capital equipment and components.

As shown in Table 1, the required expansion of the transmission system to 2029 calls for R81 billion (\$4.6 billion) in capital expenditures on transmission lines and other grid infrastructure. Eskom’s latest annual report states that achieving its expansion goals will require the average annual transmission line build to increase to at least 1,400km per year over the next 10 years, from an annual average of 313km from 2015 to 2024 (Eskom, 2024b).

This represents both a financial and a technical hurdle, due to global supply chain constraints in key equipment such as transformers and local capacity constraints in engineering, procurement and construction value chains (Vajeth and Tlhatlhetji, 2023; NTCSA, 2024). However, compared to renewables generation projects, which relied heavily on imported technologies, interviewees emphasised opportunities for South African industries in transmission, in sectors including steel, cabling, and specialised components such as insulators and voltage regulators, where domestic manufacturing capacity is strong and potentially leveraged in the build-out of the transmission network.⁵

Table 1 Key extracts from IRP (2019) and TDP (2025–2034)

| | |
|-----------------|---|
| IRP (2019) | Coal 72.2% of installed capacity as of 2018; projected to be 45% of installed capacity by 2030 RE at 0.7% of installed capacity as of 2018; projected to be 26% of installed capacity by 2030 Scale of projected renewable energy installation will require utility-scale storage capacity to manage intermittency and mismatch of supply-demand timing As wholesale and retail tariffs rise, more users are expected to look for alternatives like rooftop (residential) or utility scale solar generation (mines and other big industrial users) and leave the national grid |
| TDP (2025–2034) | Significant transmission investment needed for simultaneous renewable energy integration and network sustainability, including but not limited to the following asset requirements: 14,494km of transmission lines; 210 transformers; 40 capacitors; 59 reactors; 8 synchronous conductors R81 billion of capex required for capacity expansion in initial five-year period (2025–2029), rising to R113 billion when refurbishment, land access and other capex is included |

5 13 October 2025, virtual, IDC

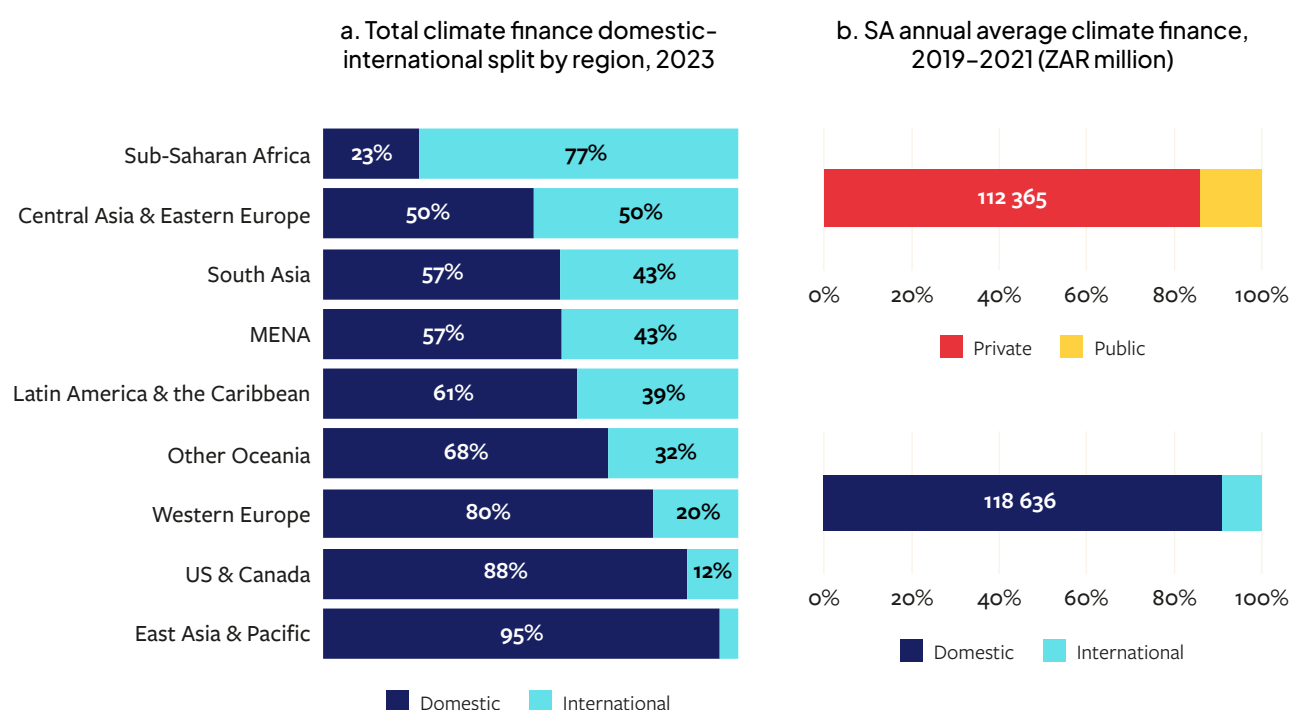
2.3 Financing the energy transition

South Africa's financing landscape involves a complex mix of domestic and international actors, with both public development banks (PDBs) and commercial financiers active in the energy sector. As a middle-income country with a deep financial sector, South Africa stands out from other sub-Saharan African states in that financing for the energy transition has been dominated by domestic commercial banks (see Figure 4), rather than international development finance, which has been less competitive, particularly for renewables via Independent Power Producers

(IPPs). This has led to relatively efficient capital mobilisation for renewables, but also reflects a skewed risk appetite, and engagement in transmission and distribution investments is still limited.

South Africa's public development banks, the Industrial Development Corporation (IDC) and the Development Bank of Southern Africa (DBSA), play a pivotal role in supporting infrastructure and renewable energy projects. IDC plays a key role in financing black economic empowerment (BEE) companies as part of commercial co-investment structures, while DBSA has been notably active in the REIPPPP programme, particularly in guiding the procurement process for generation IPPs.

Figure 4 Global and South Africa climate finance overview



Source: Author's elaboration based on data from Climate Policy Initiative: a. Global Landscape of Climate Finance, 2025; b. The South African Climate Finance Landscape, 2023.

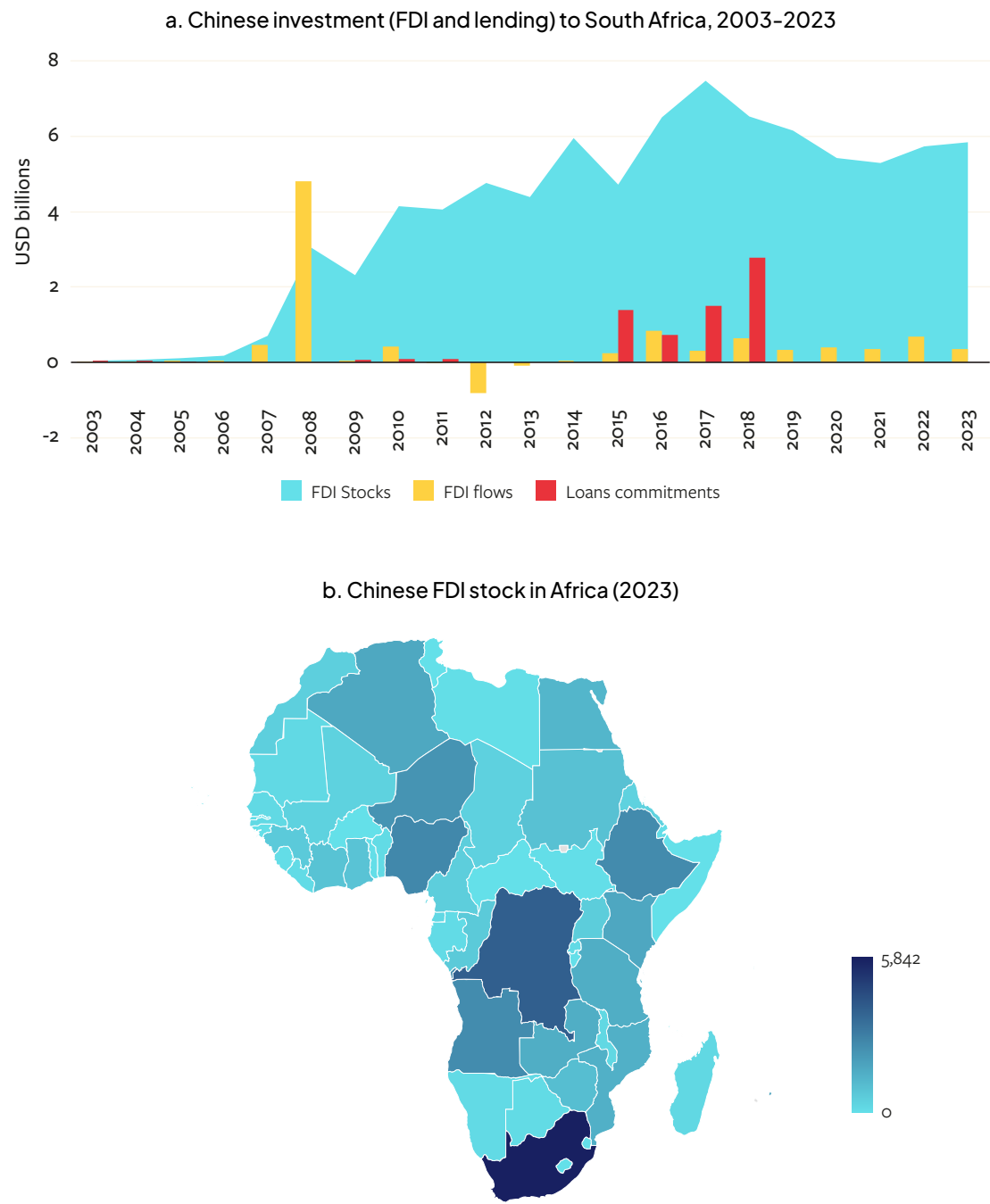
Geopolitically, South Africa occupies a distinct position globally, balancing between north and south. It has leveraged new country platforms for international collaboration with G7 actors⁶ via the Just Energy Transition Partnership (JETP), promising \$8.5 billion in concessional and grant-based finance from donors including the EU, UK and US (Simpson, Jacobs and Gilmour, 2023; Prentice, Steadman and Gilmour, 2025). However, disbursement has been slow, largely due to stalled progress on coal decommissioning and delays in implementing the Just Energy Transition Investment Plan (JET-IP), and the programme has been criticised for the disproportionate allocation of financing towards international rather than South African recipients, with almost none allocated to building electricity infrastructure (Lehmann-Grube et al., 2024). However, with the entry of the World Bank, most significantly through the recently created credit guarantee vehicle (CGV), which aims to de-risk private investment in the transmission sector, this may see more financing go towards T&D infrastructure.

As part of the BRICS bloc, South Africa has also engaged with China, as well as investors from the Gulf. The New Development Bank (which has Chinese and South African shareholding) has extended international financing via loans to IDC. Unlike other sub-Saharan economies such as Zambia or Angola, South Africa has not been a major borrower from China, and has received no sovereign loans from China Eximbank.

China has not been part of energy transition country platforms, but remains a major source of capital via foreign direct investments. South Africa ranks consistently in the top five African destinations for Chinese FDI, which surged over a 20-year period, from US\$75mn in 2003 to nearly \$4bn in 2023. The record high in 2008 marked the acquisition by Chinese commercial bank ICBC of 20% of South Africa's Standard Bank Group for \$5.5 billion, one of the largest Chinese FDI transactions in Africa to date.

⁶ As of March 2025, the US has withdrawn from the International Partners Group (IPG) of the JETP programme, leaving the United Kingdom, Germany, France, the European Union, Denmark and the Netherlands as the remaining members (<https://www.gov.uk/government/news/joint-statement-from-the-international-partners-group-on-the-us-withdrawal-from-the-just-energy-transition-partnership-in-south-africa>).

Figure 5 China–South Africa overseas finance and investment trends, 2003–2023



Source: Author’s elaboration. SAIS China Africa Research Initiative, Chinese FDI in Africa; loan data from the Chinese Loans in Africa database (SAIS-CARI; Boston University)

3 Chinese investment in South Africa's energy sector

Chinese capital and Chinese companies play a key role in South Africa's energy sector, in generation and transmission and in transition financing. However, direct financing and investment from Chinese firms faces evident constraints.

Drawing on primary stakeholder interviews, this chapter outlines areas of Chinese involvement in these sub-sectors and broader challenges to investment, and the impact of South Africa's domestic reforms. It also highlights examples of co-investment and co-financing between Chinese and South African entities, including Longyuan-Mulilo and Samancor-CGN, and examples of cooperation in the financial sector.

3.1 Chinese investment in renewable energy generation

Chinese companies like Longyuan (now part of CHN Energy Group), Goldwind and PowerChina have been active in the power generation sector in South Africa, and are particularly competitive on the EPC (Engineering, Procurement and Construction) side of large-scale wind and solar projects (Shen and Power, 2017; Chiyemura et al., 2023). Their extensive experience of executing large

infrastructure projects across diverse geographies, including challenging environments allows them to leverage optimized processes, proven management practices, and high levels of technical expertise to deliver projects on time and within budget (Baker and Shen, 2017).

The Chinese EPC model benefits from efficient coordination between technical design, equipment procurement and infrastructure construction phases, reducing delays and improving project timelines. As one interview participant explained, 'In China, we have accumulated extensive experience in contracting for turnkey projects',⁷ allowing Chinese companies to manage large-scale power generation installations with a level of expertise that local or other international competitors often lack. This contrasts with the South African situation, where power generation project management and subcontracting were historically fragmented and inefficient.

Chinese companies also bring economies of scale due to their large project portfolios and vertical integration. As a result, they can access lower-cost equipment and materials, reduce procurement times and negotiate better terms with suppliers. These advantages

⁷ 2 April 2025, Johannesburg, representative from a Chinese power company.

enable them to offer more competitive pricing in tenders. This combination of technical expertise, efficient project execution and cost-effectiveness has made Chinese EPC contractors the leaders in the global clean energy market.

Chinese companies offer cost-effective and high-quality technology solutions for large wind and solar projects due to their domestic production capacity and advanced manufacturing capabilities. Companies like Goldwind, Jinko and Longyuan benefit from China's well-established and highly competitive renewable energy manufacturing sector. This vast production capacity allows these companies to source turbines, solar panels and other critical components at significantly lower costs compared to their international competitors.

As interviewees highlight, Chinese companies can capitalise on economies of scale, and by manufacturing components in-house or sourcing them from domestic suppliers. This reduces procurement costs, minimises supply chain disruption and creates cost savings to pass on to clients. China's technology development is continuously evolving, allowing these companies to offer cutting-edge solutions with improved performance, such as more efficient wind turbines and solar panels with higher energy conversion rates. In recent years, Chinese companies also provide integrated power storage solutions for wind and solar energy investments at reasonable cost.

The combination of low manufacturing costs and high-quality products ensures that Chinese firms can deliver renewable energy projects that are both financially competitive and technologically advanced. This competitive advantage enables them to dominate the global market, especially in emerging economies like South Africa, where cost-effective renewable energy solutions are crucial for large-scale development.

While Chinese companies have dominated the market as original equipment manufacturers (OEMs), they face challenges when it comes to being competitive as project developers or equity investors in South Africa's renewable energy sector. The market for renewable project development has to date been dominated by European developers, and there is only one successful example of a Chinese–South African co-investment in the IPP sector (see Box 1).

“[SOEs] are often constrained in where and how they can invest by rules under the State-owned Assets Supervision and Administration Commission (SASAC), which... requires minimum thresholds of Internal Rate of Returns (IRR) of 8%, meaning they cannot justify bids at tariffs that erode profitability”

Box 1 Case study: Longyuan's De Aar Wind Farm

The De Aar Wind Farm in Northern Cape province was developed by China Longyuan Power Group, under the third round of the REIPPPP. The project has an installed capacity of 244 MW across two adjacent sites. Longyuan Power Group acts as the lead developer, majority equity investor and technical operator of the wind farms. Mulilo Renewable Energy, a South African local partner, facilitates local stakeholder engagement. The project uses 1.5 MW turbines supplied by United Power (a subsidiary of Guodian group) and Eskom acts as the off-taker through a 20-year Power Purchase Agreement (PPA).

The financial structure is based on a project finance model, as is typical under REIPPPP. The relatively high tariff offered in the third round made this one of the few Chinese projects in South Africa to report strong financial returns, particularly compared to later REIPPPP rounds where tariffs dropped significantly. Nedbank Capital and IDC provided the senior debt facility, enabling the financial close in February–March 2015. Total investment in both phases amounted to approximately R5 billion (\$343 million). Financing follows a classic REIPPPP model: international equity backed by Longyuan, local equity for BEE support, and project debt from prominent South African banks – reinforced by a long-term PPA providing stable revenue. Financing was structured entirely through South African institutions, with no external state-backed financing from Chinese policy banks.

Despite the successful partnership between Longyuan and Mulilo, there have been no further joint IPP investments between the two companies (though there was an unsuccessful attempt in round 7), nor have there been any subsequent South Africa–China partnerships in generation projects. Several factors appear to have influenced this, including the sharply declining tariffs in later rounds of the REIPPPP, due to fierce competition, and the relative weakness of the Longyuan group in long-term localisation, compared to other developers such as EDF, ENGIE and ACWA, which built deep local partnerships. Later rounds of the REIPPPP also faced greater uncertainty in obtaining a PPA agreement from Eskom, leading to a pullback and risk aversion from Chinese developers in the sector. Developers also faced higher demands in terms of project preparation, including securing land rights and environmental permits, and a higher level requirement of BEE participation. These are areas where Chinese firms are less experienced and subsequently were less willing to invest.

Chinese companies often lack the long-term strategy needed to succeed as equity investors in the host country.

Unlike local or Western firms that appear to build enduring relationships and understanding of the intricate dynamics of the market, Chinese companies tend to focus on short- to medium-term gains rather than long-term investments.

Developing large-scale energy projects requires in-depth local knowledge and a strong network with key stakeholders, including policy-makers, financiers, industrial actors and civic groups. This is crucial not only for navigating the regulatory environment, but also addressing social and environmental concerns that are integral to the success of projects. As one interviewee highlighted, ‘Building local networks and understanding the socio-political landscape is vital for long-term success’.⁸

The requirements of BEE policies mandate building strong partnerships with local companies and investors, for which European companies have a stronger cultural affinity – for example, through building domestic subsidiaries and partners they can then work with. Compared with European and Middle Eastern developers, Chinese companies struggle to forge these relationships, and to meet BEE threshold requirements.

Furthermore, project development in emerging markets like South Africa also demands a high level of flexibility and

responsiveness to shifting policies and local challenges. Chinese companies, particularly State Owned Enterprises (SOEs), are heavily controlled by directives from central government, and are often constrained in where and how they can invest by rules under the State-owned Assets Supervision and Administration Commission (SASAC), which **prohibits investment in ‘junk-rated’ countries unless politically mandated, and requires minimum thresholds of Internal Rate of Returns (IRR) of 8%**, meaning they cannot justify bids at tariffs that erode profitability. According to one interviewee, ‘In the sixth round [of REIPPPP], it was only a little more than 10 cents in RMB ... basically did not make money, so Chinese companies did not participate much in the latter’.⁹ SASAC rules also restrict the use of certain exchange rate hedging instruments. This is salient since currency and exchange risk and devaluation is a key factor deterring investment, given revenue streams of PPAs are denominated in Rand.

This lack of long-term strategic commitment makes it more difficult for Chinese companies to fully capitalise on opportunities for equity investment and project development. Leading investors like EDF and ENGIE, and Middle Eastern firms such as ACWA and MASDAR, are more flexible and adaptive, and consequently more competitive as project developers and equity investors.

⁸ 3 April 2025, Johannesburg, representative from a Chinese power company.

⁹ 2 April 2025, Johannesburg, representative from a Chinese power company.

Interviewees noted how the low interest rate context for European and Western firms may also have been a competitive advantage, as well as lower returns requirements compared to Chinese firms.¹⁰ Other interviewees noted that project developers also leveraged significant margin via low EPC costs, employing low-cost Chinese contractors in project construction and implementation.

These international companies have established a solid presence in the region, often building strong and strategic relationships with local policy-makers, financiers and community stakeholders. EDF and ENGIE, for instance, have invested heavily in understanding South Africa's regulatory environment and energy landscape, enabling them to adapt their strategies to the country's evolving energy policies. Similarly, ACWA and MASDAR have aligned their projects with local priorities, focusing on sustainable development and addressing social concerns through partnerships with local communities.

This contrast highlights a key limitation of Chinese companies, which often prioritise short-term project execution and cost efficiencies over the long-term, nuanced approach required for successful project development and equity investment. The ability to navigate complex political, regulatory and social contexts – qualities that underpin the success of companies like EDF, ENGIE, ACWA and MASDAR – is often absent in the strategies of Chinese firms, hampering their competitiveness in South Africa's renewable energy market.

Another significant limitation for Chinese companies, especially SOEs, as equity investors is their high level of risk aversion. This stems from the internal accountability system within SOEs and policy banks, where managers are subject to strict oversight and scrutiny by the Communist Party. If an investment turns out to be unprofitable, SOE and state bank managers face stringent disciplinary checks and potential political consequences (Lui and Chen, 2021). This creates a strong incentive to avoid risky or untested investment options, especially in foreign markets like South Africa, where the political, economic and regulatory landscape can be unpredictable.

All these factors mean that Chinese SOEs tend to prioritise more conservative, low-risk approaches (such as EPC/OEM) to ensure financial stability and avoid failure, with little scope to move beyond these short-term roles. This has limited their ability to compete effectively in the high-risk but high-return domain of equity investment and project development.

3.2 Transmission and captive generation

South Africa's transmission infrastructure is a critical bottleneck to renewable energy expansion and the country's energy transition. The main utility, Eskom, is characterised by frequent failures and financial constraints, and is no longer able to access sovereign guarantees to borrow externally. The newly established National Transmission

¹⁰ 2 April 2025, Johannesburg, representative from a Chinese power company.

Company of South Africa (NTCSA), although legally separated from Eskom, is a subsidiary of Eskom Holdings with ambiguous autonomy. More broadly, the mismatch between resource locations and demand centres reinforces the urgency of expanding the grid. As one interviewee emphasised, ‘the energy investment priority in South Africa is *grid*, *grid* and *grid*’.¹¹

Recognising these limitations, the South African government has introduced an **Independent Transmission Project (ITP) programme** to attract private and foreign investment for the construction of 14,500km of new transmission lines, as outlined in the Transmission Development Plan (TDP), with an expected investment gap of R440 billion (\$25 billion) (Molokomme and Mokwele, 2024). The government has collaborated with the World Bank to develop a **Credit Guarantee Vehicle (CGV)**, with the objective to attract institutional investment and improving bankability for ITP projects, to be operational in 2026.¹² In December 2024, the government launched a Request for Information (RFI) as a market-sounding exercise. Chinese actors such as State Grid were among the international stakeholders participating in the RFI, and were mentioned by several interviewees as potentially interested in future grid investments and ITP opportunities. State Grid, via its

subsidiary, has built several ultra-high voltage (UHV) transmission lines in Brazil and operates them under concession.¹³

While Chinese firms have expressed interest in transmission opportunities in South Africa, there are several challenges. First, as with IPP projects, firms have limited appetite for the long-term (25–30 years) Build-Own-Operate-Transfer (BOOT) structures for ITP preferred by the South African government. As one Chinese representative noted, ‘we can do two years EPC+F with insurance, but 25-year concessions are not for us’.¹⁴ Second, South Africa’s sovereign credit rating, coupled with the significant depreciation of the Rand against major currencies like the dollar, presents substantial financial risks for Chinese investments denominated in foreign currencies. As with SOEs in the generation sector, SASAC guidelines prevent SOEs from pursuing opportunities in transmission sector projects, with constraints on hedging instruments such as derivatives for currency risk. This is an added hurdle for firms operating under strict internal accountability and risk control frameworks.

Nevertheless, some privately owned Chinese power companies expressed interest in contracting opportunities in transmission network plans, particularly in bringing Chinese technologies including transformers, inverters and high voltage

11 6 June 2025, Presidential Climate Committee.

12 <https://www.gov.za/news/media-statements/national-treasury-independent-transmission-programme-06-jun-2025>

13 See: <https://www.worldconstructionnetwork.com/news/state-grid-brazil-holding-construction-electricity-transmission-project/?cf-view>

14 1 June 2025, Johannesburg, expert from a Chinese power construction company.

direct current (HVDC) systems to South Africa. As one interviewee noted, ‘this is the opportunity we have been waiting for. We are also very strong in power grid construction ... we can leverage our EPC and equipment advantages to build the power grid’.¹⁵

One area that has seen nascent Chinese interest is embedded generation or captive power solutions, where electricity market reforms have allowed corporate offtakers to directly purchase from IPPs. Developers can now sign PPAs with private off-takers, such as mining companies or data centres, effectively bypassing Eskom’s traditional role. This investment structure has seen investment from SA commercial players including Nedbank,¹⁶ as well as Chinese players.

The Samancor chrome mine solar PV project, co-financed by China General Nuclear Power (CGN) and Sinosteel, is a notable example of joint Chinese–South African investment in the energy sector (see Box 2), and of the commercial appeal of embedded generation projects. The case also shows how, despite internal alignment between Chinese financiers and EPCs, South Africa’s complex local regulatory and social environment remains a challenge. The persistent struggle for financial closure due to BEE requirements and the eventual need for grid connection mean that captive renewable and transmission models are not yet a viable

bypass to utility-scale transmission investment. The example also underscores that local compliance, particularly BEE, is a non-negotiable and significant hurdle that Chinese entities must navigate and adapt to in order to operate effectively in South Africa’s energy sector.

‘Wheeling’, whereby an Independent Power Producer (IPP) evacuates power onto the Eskom grid, with Eskom providing a ‘green credit’, is gaining traction for large industrial off-takers seeking to offset their emissions. The emergence of energy traders and aggregators, such as Discovery Green, represents a new market development, consolidating energy from multiple generators and selling it to a portfolio of clients, thereby absorbing and managing the off-taker risk.

Beyond transmission and generation, energy storage is vital for integrating intermittent renewables and ensuring grid stability, and is another area where Chinese technologies and investment can play an emergent role. Alongside solar and wind equipment, imports of battery cells and converters from China account for a growing proportion of total cleantech imports (Figure 6).

The South African government has launched a Battery Energy Storage Independent Power Producers Procurement Programme (BESIPPPP), which is currently in its third round. While

¹⁵ 2 April 2025, Johannesburg, representative from a Chinese power equipment manufacturer and engineering contractor.

¹⁶ <https://cib.nedbank.co.za/insights/articles/unexpected-connections/solar-project-powers-titanium-mine.html>

direct investment in long-term asset ownership for storage projects might be approached with caution by some Chinese SOEs due to financial restrictions and country risk, their strong presence in the supply chain and EPC market positions them as key enablers of South

Africa's growing energy storage capacity. Companies like Huawei and Sungrow are prominent suppliers of storage equipment, alongside smaller Chinese battery storage solutions, presenting opportunities for co-investment and local value chain development.

Box 2 Samancor chrome mine and solar PV

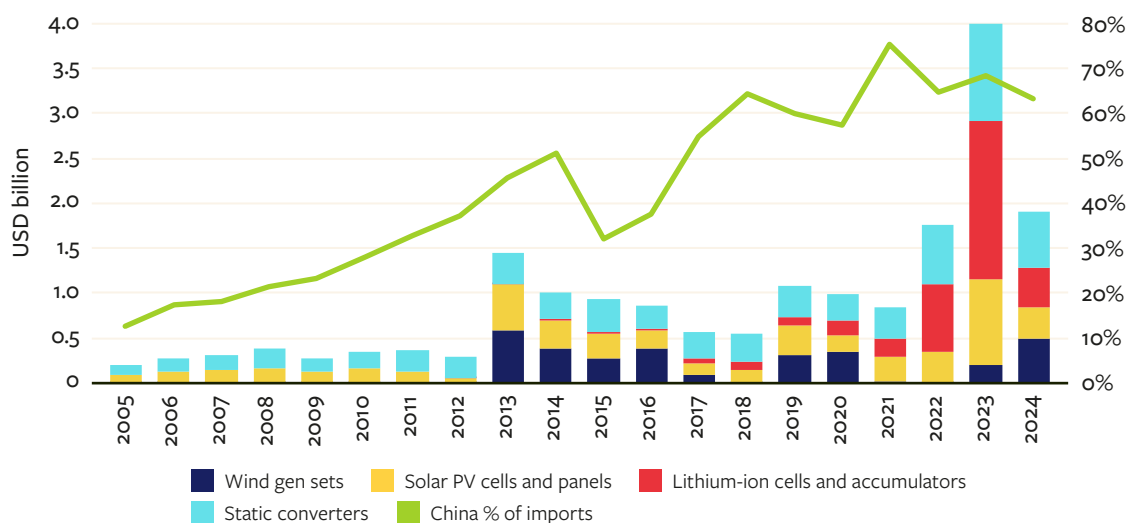
The project is structured as a private PPA for a captive solar PV power station, signed between CGN and Samancor, the power purchaser. Unlike government-tendered IPP projects, the project is entirely Chinese-funded, with an offtaker (Samancor) that has a significant Chinese stakeholding in the company.

China Construction Bank (CCB) is providing the project finance in Rand, with the overall structure involving Chinese investors backed by credit insurance. Notably, Standard Bank, a prominent local financier, was approached for financing, but was unable to provide funding to Samancor due to its 'huge exposure' to the company from existing commitments.

The general contractor is Northern International, which subcontracted to Huashan International Shaanxi Construction, indicating that all contractual parties involved in the construction phase are Chinese entities. The 'all Chinese-funded' and EPC-centric approach was initially perceived to facilitate smoother implementation by minimising language barriers and trust issues among project stakeholders.

Although originally conceived as a standalone off-grid solar and mining operation, the smelter's continued reliance on the Eskom grid for its operations has necessitated a shift towards seeking grid connection. This requires complex negotiations with Eskom, presenting both technical and financial challenges. Despite initial discussions predating the Covid-19 pandemic, the project has faced protracted difficulties in reaching financial closure, a process that has now extended into its fifth year. One of the most significant hurdles highlighted by interviewees is stringent BEE requirements.

Financing for the local investment components mandated by BEE has been sought from South African DFIs, with IDC providing debt financing for the local BEE partner. While a successful case of co-financing, Chinese stakeholders also noted that South Africa's due diligence processes and the application of a 'very British' legal framework present a steep learning curve for the Chinese SOEs involved.

Figure 6 Clean technology imports from China

Source: Author's elaboration, based on ITC data and UN Comtrade statistics, South Africa revenue services

Several interviewees stressed the future need for and reliance on Chinese suppliers in the roll-out of transmission projects, and the need for strategic procurement and long-term planning for key components such as transformers,¹⁷ but also to ensure the facilitation of supply-chain linkages and the embedding of South African manufacturing capacity into these projects.

Beyond individual suppliers, Chinese firms have also been involved in energy storage projects within the country. BYD has built South Africa's largest solar-plus-storage plant, demonstrating its capacity in large-scale energy storage deployments.¹⁸ Pinggao was contracted by Eskom for a major Battery Energy Storage System (BESS) project as part of

grid stabilisation plans, though roll-out of subsequent phases has stalled due to Eskom's financial constraints.¹⁹

3.3 Financial partnerships

Chinese banks play an active role in South Africa's financial sector, with an under-recognised role in liquidity provision. Institutions such as the Bank of China have supported Eskom through syndicated credit lines. However, direct bilateral lending is seen as unviable due to Eskom's deteriorating financial performance and substantial debt burden. This suggests that, while direct project finance to Eskom is either deemed too risky or constrained by internal guidelines, Chinese policy banks and commercial lenders can find alternative, less direct avenues to deploy capital.

¹⁷ 2 June 2025, Johannesburg & virtual, Public Investment Corporation.

¹⁸ <https://www.evlithium.com/lifepo4-battery-news/byd-energy-storage-south-africa-largest-solar-stor.html>

¹⁹ <https://eng.yidaiyilu.gov.cn/p/252792.html>

Table 2 Summary of financial linkages

| SA institution | Financial linkages | Key activities |
|---------------------------|--|---|
| Standard Bank | International shareholding from ICBC (since 2008) | <ul style="list-style-type: none"> • Recipient of on-lending • Facilitated co-financing and international syndication |
| Nedbank | Strategic cooperation with Bank of China (2013) | <ul style="list-style-type: none"> • Support for China–Africa business and trade |
| Rand Merchant Bank | Strategic cooperation with CCB (2013) | <ul style="list-style-type: none"> • Support for China–Africa business and trade • Facilitated international syndication |
| IDC | Links with CDB and BOC MOU signed with CADF | <ul style="list-style-type: none"> • Recipient of on-lending and lines of credit • Co-financing and co-investment with CADF |
| ABSA | Previous equity stake (as part of Barclays group) | |

Source: Authors' elaboration

Chinese banks and financiers are notably absent when it comes to direct financing for energy generation projects, which has been driven by domestic commercial banks. However, South African and Chinese banks have built long-term relationships over years that have served as an additional source of liquidity for South Africa's financial markets. These include participation in syndicated loans or on-lending through local DFIs, allowing for engagement while mitigating direct exposure to institutions such as Eskom's financial vulnerabilities, and navigating the complex local regulatory environment.

South African stakeholders also highlight the role of Chinese financiers in the secondary market, deepening the financing capacity of South African banks through risk-sharing structures (Box 3).

Chinese policy and commercial banks have established several strategic relationships with South African banks (see Table 2), most notably the long-standing shareholding relationship between ICBC and Standard Bank Group (SBG) since 2008, where ICBC is a major shareholder of SBG as well as other subsidiaries.²⁰ These relationships have involved participation in syndications, on-lending to South African institutions and secondary market transactions. In recent years, IDC has also been the beneficiary of several major lines of credit from Chinese commercial banks including BOC, of up to 10bn ZAR, supporting their corporate activities and project finance, and respondents noted exploring instruments including RMB-denominated panda bonds as means to augment their funding sources. While competitively priced, respondents

20 ICBC acquired a 20% stake in Standard Bank Group South Africa in 2008, one of the largest FDI transactions on the continent to date. ICBC acquired an 80% share in Standard Bank Argentina in 2012, and in 2015 took a 60% stake in Standard Bank's London-based subsidiary Global Markets Business, establishing ICBC Standard Bank plc.

noted the tenor of the facility was much shorter (typically 2-3 years), creating a **maturity mismatch** for financing longer-term projects entailed in energy investments.²¹

Despite these linkages, there have been very few cases of ‘green’ co-financing in South Africa’s power or renewable energy sector between Chinese and South African banks. ICBC and Standard Bank have one recorded case of co-financing in 2013 in support of the Scatec solar PV project, under the fourth bidding round of the REIPPPP, which was structured to help pave the entry of Chinese suppliers and equipment manufacturers into the sector.

In the years since, respondents note that lower margins have reduced external interest in financing, due to growing competition in the sector and what one respondent called ‘extremely competitive... crazy kind of financing terms’.²² This has left little space for international financiers, including Chinese banks, to compete.

Some Chinese respondents noted strong top-down pressure from head office to expand participation in green finance transactions. However, lack of project pipeline and other regulatory barriers have hindered this. Interviewees noted high compliance costs under South African financial regulations, for example in the strict application of Basel III standards or the requirement for separate local capital adequacy reporting beyond group-level

accounting.²³ This disproportionately impacts Chinese banks which work through overseas branches (such as BOC and CCB), which have less capacity. Respondents also noted the lack of policy incentives to encourage green finance, as well as the lack of a general taxonomy or standards for green projects. While there was a clear willingness to engage in green finance, some interviewees expressed that, unless there was a top-down push via a high-level visit, ‘it will definitely not be [Chinese] commercial banks that will take the lead, but policy banks’.²⁴

South African respondents in the sector also saw opportunities and the need for additional international financing and liquidity in the energy sector, particularly with a need for longer-term financing for PDBs such as IDC that can match the maturity of the infrastructure assets. With growing demands for transmission and generation investment, some highlighted concerns regarding a future liquidity squeeze as local banks hit their capacity. Some interviewees acknowledged the need for a ‘price correction’ in anticipation of future liquidity needs in the power sector and for grid investment. This would also need a tariff adjustment, to make investments attractive and bankable for international finance. Other banking sector respondents also noted opportunities for supporting SME financing as part of a just energy transition, bringing Chinese OEM manufacturing capacity to South Africa and support collaboration between SMEs.

²¹ 13 October 2025, virtual interview, IDC

²² 11 June 2025, Johannesburg, representative from Standard Bank SA.

²³ 3 April 2025, Johannesburg, expert from a Chinese financial institution.

²⁴ Ibid.

Box 3 Financial cooperation between Chinese and South African institutions

On-lending and financial intermediation

Eskom has been a recipient of international syndicated loans involving BOC (most recently in 2018), and SBG has received syndicated loans involving BOC and ICBC.

IDC has cooperation agreements with Bank of China (BOC) and China Construction Bank (CCB), concluding funding agreements with both of **R10 billion** for regional trade and investment and infrastructure and industrial development, respectively.²⁵ IDC has also signed an MOU with CADFund for co-investment and syndication in key projects, including in the Samancor renewables IPP (Box 2).

These direct credit lines have supported the direct operations of financial institutions, which in turn support broader trade objectives for Chinese exporters and suppliers. For IDC, on-lending also helps expand their balance sheets, giving them extra capacity to partner in joint projects.

Liquidity support and risk transfer

Chinese banks also play a role as an additional financial resource for South African financiers via secondary markets. Respondents from SBG and Rand Merchant Bank (RMB) noted leveraging Chinese financiers in downstream risk-transfer transactions – for example, in selling a portion of their risk portfolio to Chinese banks. SBG, for example, is opening conversations with ICBC on taking on some portion of their downstream debt from their long-term project finance portfolios, akin to practices with other institutional investors.

RMB, which has a strategic relationship with CCB, also highlighted this and noted using CCB as an ‘extra balance sheet’ through which they can syndicate deals, including in Rand, as well as cross-border transactions.

Direct financing and green financial innovation

Finally, Chinese banks have engaged in financing for green projects, including local currency Rand financing, and developing green finance instruments, albeit on a small scale. BOC has pioneered the use of sustainability-linked loans in the mining sector, as well as support for the SOE Sasol in a waste-to-energy generation project.

25 <https://www.idc.co.za/idc-and-bank-of-china-sign-r10bn-funding-framework-agreement/>; <https://www.idc.co.za/idc-china-construction-bank-sign-r10bn-strategic-cooperation-deal/#:~:text=The%20cooperation%2odeal%2obetween%2othe,between%2othe%2otwo%2oBRICS%2opartners>

4 Bottlenecks and challenges facing investment

Chinese investment in South Africa stands out from its engagement in other parts of sub-Saharan Africa,

characterised by a strong orientation towards commercial investment and trade, rather than ECA-backed official debt financing. However, Chinese investors also play a shorter-term role as project stakeholders, with little ambition to expand into longer-term project development and operation, as has been the trend in other parts of Africa.

While Chinese suppliers and contractors play a significant role as EPC contractors and OEMs, firms and financiers have taken a back seat in project development compared to European and Middle Eastern firms, which have been more active in the sector. This section outlines some of the key challenges facing South Africa in the expansion and transition of its energy sector, and that hinder Chinese (and broader international investment) in the sector.

4.1 Financial risks

Credit and currency risk were highlighted by Chinese stakeholders as key barriers to longer-term investment.

South Africa's poor credit rating (B2) and depreciation of the Rand have impacted

the value of returns for foreign investors based in US dollars or euros, including Chinese firms.

For short-term trade and investment such as EPC contracts, Chinese firms were generally comfortable with hedging currency risk for 2–5 years, which allows them to cover exchange rate losses over the period of project construction. However, under the EPC+F structure with Sinosure insurance, exchange rate risk is not covered.

The long-term nature of IPP and ITPs under BOOT structures, requiring 20–25-year concessions, was viewed as too risky. Since the PPA would be denominated in Rand, companies are highly vulnerable to significant exchange rate losses. Interviewees noted that Chinese SOEs also face regulatory restrictions from SASAC in using financial derivatives to hedge currency risk. These barriers have reduced their competitive edge relative to Western companies that have been more agile in navigating the South African market. Some noted Chinese investors' lack of experience in project finance: 'most of the Chinese investors want to negotiate price and payment based on a corporate facility... project finance is definitely new to the Chinese investor'.²⁶

26 4 June 2025, Johannesburg, expert from South African financial institution.

Cost and structure of financing was another area where Chinese investors and financiers were at a disadvantage.

The ability of South African banks to provide longer-term financing for renewable energy projects has provided a competitive edge, but has also had a crowding out effect. Respondents from South African commercial banks noted that they were able to provide highly competitive terms to developers that are much longer than Chinese banks and financiers can offer. For standard Chinese ECA finance (Eximbank loan/Sinosure insurance), the typical maximum term of 15 years cannot cover the full 20 years of a PPA under a South African IPP, creating a **maturity mismatch**.

4.2 Tariffs and pricing

Stiff competition in the generation sector has led to a downwards push on tariff pricing for electricity, deterring foreign financing in the sector.

Some interviewees questioned the sustainability of this situation, and the need for a price correction in the event of a liquidity squeeze, which could then open up space for international financiers.

Low tariffs also stretch the bankability of transmission sector investment. One respondent noted ‘the tariffs are dirt, dirt low ... no one is going to come in at the current structure as it stands now’.²⁷ Later rounds of REIPPPP saw tariffs at 10 cents RMB or 50 cents Rand. Since most Chinese SOEs are bound by SASAC mandates

requiring **minimum IRR of 8%** for any overseas investments, low-tariff projects become financially unviable.

While South Africa’s electricity sector has partially liberalised, with further liberalisation plans from 2031 to move towards flexible tariff pricing, the current flat structure requires careful pricing. The sustainability of generation and transmission operations also depends on tariffs adequately priced to incorporate key costs, including grid stabilisation services that mitigate the risk of future blackouts or service instability. As one interviewee noted: ‘even as we increase renewables, there are additional costs in terms of system services’.²⁸

Offtaker risk is a key consideration for generation and transmission projects.

Although embedded generation models are attractive, this trades off the offtaker risk of a single entity versus a diversified offtaker model that would come with grid connections and the ability to ‘wheel’ power. The growth in the energy aggregator market has been a major innovation, allowing energy traders in the middle, like Discovery Green, to bear the offtaker risk and intermediate between generators and consumers. More credit enhancements are needed to support these newer players.

Most bilateral PPAs for REIPPPP projects rely on Eskom as an offtaker, and the utility’s recalcitrance in previous bid windows has been a major obstacle to

²⁷ 2 June 2025, Johannesburg, energy sector expert, Public Investment Corporation.

²⁸ 5 June 2025, Johannesburg, IPP office.

the wider roll-out of renewables. This ‘trust deficit’ with Eskom will need to be remedied with NTCSA. The creation and functional separation of NTCSA from Eskom as a subsidiary was key in building investor confidence, and a necessity for the feasibility of the WBG and CGV, but uncertainties remain. The first concerns **control of the grid access unit**, which functionally remains within Eskom, allowing it the possibility of closing off competitors to the grid. The second concerns **control of procurement**, and ensuring a transparent and competitive procurement strategy for key technologies. While the IPPO was created for the REIPPPP, some interviewees expressed doubt over its capacity to administer procurement for the transmission sector.

Finally, **servitudes and land acquisition** rights are a major risk for transmission development. Interviewees noted that, while NTCSA and Eskom are responsible for de-risking planned lines, they cannot fully guarantee to ITP investors that there will be no obstacles to planned routes. The risk of legal obstacles to land clearance and project delays remains a deterrence to investors.

4.3 Regulatory barriers

For Chinese and other international investors, South Africa’s **BEE policies** were cited as an obstacle to investment. While in earlier years requirements for BEE stakeholding were lower – making investments such as the Longyuan-Mulilo partnership feasible – current requirements of 25–49%

BEE ownership (49% for government-tendered projects) have discouraged Chinese IPP participation and project development. Several interviewees expressed frustration with the BEE programme, citing the lack of credible companies and partners, where in some cases BEE companies may receive a share of profits but play little role in business operations outside of fulfilling regulatory requirements. Respondents also highlighted corruption risks in procurement for major government projects.

Interviewees noted a lack of institutional flexibility and local networks of Chinese investors to identify and work with BEE partners, compared to European companies that generally have stronger local networks. However, other Chinese investors were more optimistic, and saw local partnerships as a necessary model for localisation: some noted forming local consortiums via a JV for bidding purposes or subcontracting as possible solutions, or forming a local subsidiary for localising production or manufacturing processes, bringing downstream advantages amidst current US tariff restrictions.

Others cited BEE requirements as a key challenge of financing, since it conflicts with the **minimum content conditionalities** of Chinese ECA financing. This means local financing is key to enable local portion of investment – as in the case of the Samancor-CGN partnership, which has sought to raise funding from South African PDBs. IDC has supported BEE partners for international joint

investments (including with Chinese co-investors), but the limitations of its balance sheet constrains the role they can play.

4.4 Policy and commercial incentives for green finance

A final issue noted by Chinese interviewees was around the perceived lack of incentives for green finance. While South Africa has built green finance standards, Chinese investors still saw a **lack of policy and regulatory incentives**: green and ESG disclosure remained voluntary, without

enforcement, and there is little data on the scale of green loans. One interviewee compared the situation in China, where if you want to issue a green loan ‘my interest rate will drop immediately’, while in South Africa, commercial banks do not have the benefit of these policy tools. Others also noted the absence in climate taxonomies of support for the grid and the need to incentivise and recognise its crucial role in energy transition, commenting ‘grid infrastructure probably wouldn’t be classed as a climate investment, but it’s the critical enabler’.²⁹

²⁹ 6 June 2025, virtual, Presidential Climate Committee.

5 Conclusions and policy implications

This analysis highlights several key conclusions for stakeholders in South Africa's energy sector.

1. The transmission sector is a critical area of investment and a critical bottleneck to the energy transition and broader energy security.

Embedded generation solutions linked to mining or other corporate offtakers has been attractive to Chinese and other investors, but backbone grid investment will still be necessary to support these embedded generation projects and to wider energy transition plans.

While the creation of NTCSA and development of the new ITP structure presents opportunities for external investment, risk barriers mean it is not only Chinese investors and developers that are taking a wait-and-see approach. As the RFP is likely to be launched later this year, investors will need clarity on three areas from the South African government and energy sector agencies: first, around the **tariff and pricing**, which will be determined by the NERSA; second, on **land acquisition and servitudes**, which will be a major ESG risk that could delay project implementation; and finally transparency over how **procurement** and bids will be evaluated, as well as clarity over NTCSA's independence from Eskom in this role. Independence

of the grid access office that Eskom retains will reassure investors against unfair competition between transmission companies and NTCSA.

2. Develop transparent and long-term procurement strategies with Chinese technology suppliers.

In the transmission sector, Chinese technology suppliers play a key role in provision of modules, inverters, transformer towers and battery storage technology. However, South Africa lacks a coherent procurement strategy in these essential components. For technology such as **transformers**, which have long lead times, interviewees advocated for a strategic long-term procurement agreement with Chinese OEMs, rather than piecemeal purchasing of equipment. This would allow for savings through economies of scale and ensure prioritisation by suppliers when capacity is limited. This would require a coherent and coordinated strategy from agencies such as DTIC to work with Chinese and other international suppliers.

Procurement for the emerging transmission sector must also ensure transparency and independence. Some interviewees voiced uncertainties over the technical capacity of the IPPO to carry out the same role for the ITP programme as for the generation IPP programme, which involved multiple governmental actors including DBSA. As

the NTCSA faces the task of rebuilding trust, ensuring it has the capacity to oversee the public procurement process will be essential.

3. **Build local capacity in the energy and construction supply chain and deepen long-term linkages.** Chinese companies should be encouraged to develop a long-term localisation strategy beyond a single EPC or export contract, such as via joint ventures or local subsidiaries to meet BEE and local content requirements. This includes investing in local manufacturing capacities to align with South Africa's industrial policy and reduce procurement bottlenecks, as well as building local networks, hiring local talent and engaging local communities to leverage domestic manufacturing capacity particularly for the roll-out of transmission projects. Chinese companies should also improve project development capacity, including contract management, risk assessment, project finance and ESG compliance, to match European and Middle Eastern competitors.

South Africa should support and incentivise capacity-building for BEE companies in transmission and energy sector supply chains, particularly in grid equipment such as cables and towers where domestic production capacity is strong, and strengthening their capabilities as subcontractors and partners. This would help facilitate Chinese and other international co-investment, and help facilitate future downstream spillovers and technology transfers into the local economy.

4. **Chinese capital can be a source of additional liquidity.** Although barriers to co-financing and other financial risks have deterred direct Chinese financing and investment in the energy sector in South Africa, Chinese banks provide a source of additional funding for the commercial banking sector as well as public development banks. The lower interest rate of RMB relative to the rand and the US dollar also opens up potential financing routes via RMB, including corporate and panda bond issuance by South African banks, while the use of local currency financing has been explored by some Chinese financiers such as CCB, with the potential to increase in scale.

A critical area where Chinese liquidity could have impact is in financial intermediation of African and South African PDBs such as IDC and DBSA, which play a key role in supporting local contracting and local content requirements, including financing for BEE partner investments. IDC has benefited from some financial cooperation with Chinese banks, though these are not specifically targeted to the energy sector, but needs **longer-term financing** facilities that match the maturity of the assets being financed. Expanding the balance sheets of these policy institutions can support their capacity to partner on transition projects. Finally, an emergent area where liquidity from Chinese FIs could play a role is in support of the nascent energy trading sector, in providing credit enhancement

instruments or guarantees, a role that South African commercial banks are increasingly moving into.

5. **Chinese capital needs to adapt to South Africa's market needs.** Chinese policy banks and ECA finance remain incompatible with South Africa's market regulatory requirements and local project needs. Chinese ECAs like Sinosure should consider **extending the tenor of finance** to match the structure of PPAs under PPP or BOOT models, in order to support high-risk but strategic sectors like transmission; this may be though exploring blended finance models or guarantee-backed extensions with other international or national financiers.

Chinese financiers should also explore ways to enhance local currency financing instruments or mechanisms through South African DFIs (e.g. IDC, DBSA) to reduce currency risk and expand liquidity, and offer longer maturity financing to enable investments in transmission sectors. They should develop capacities to work with South African agencies to identify bankable green energy projects and align them with China's green taxonomy to unlock concessional financing. Lastly, China's global green finance commitments beyond individual project finance, such as under the banner of the South-South Climate Fund, can form the basis for deeper cooperation towards South Africa's climate transition goals.

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Appendix 1

Table 3 Research interviewees and affiliations

| Name | Affiliation |
|-----------------------|---|
| Jonathan Berman | Autonomi Capital |
| Tsitsi Musasike | Boston University Global Development Policy Center |
| Anonymous 1 | Chinese company in power sector |
| Anonymous 2 | Chinese state-owned company in power sector |
| Anonymous 4 | Chinese state-owned company in power sector |
| Anonymous 6 | Chinese state-owned company in power sector |
| Anonymous 3 | Chinese state-owned financial institution |
| Anonymous 5 | Chinese state-owned financial institution |
| Jonathan Marc First | Climate Policy Initiative/Multilateral Investment Guarantee Agency (MIGA) |
| Lungile Tom | Development Bank of South Africa (DBSA) |
| Anonymous | Expert in the South African commercial sector |
| Keith Webb | FirstRand/Rand Merchant Bank |
| De Wet Taljard | Investec |
| Rian Coetzee | Industrial Development Corporation of South Africa (IDC) |
| Pamela Modliwa | IDC |
| Sonja Loggenberg | IDC |
| Crescent Mushwana | IPP Office, Eskom |
| Bhavtik Vallabjee | Practitioner in SA commercial energy sector |
| Dr. Crispian Olver | Presidential Climate Committee |
| Lungile Mashele | Public Investment Corporation (PIC) |
| Kuda Ndhlukula | SADC Centre for Renewable Energy and Energy Efficiency (SACREEE) |
| Eugenia Masvikeni | SACREE |
| Rentia Van der Tonder | Standard Bank Group |
| Vincenzia Leitich | Standard Bank Group |
| Nimrod Zalk | University of Cape Town |



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